EOS Production Sites
Network Performance Report

This is a monthly summary of EOS network performance testing between production sites for November 2006 -- comparing the measured performance against the requirements.

Highlights:

- Mostly highly stable flows
- Requirements Basis:
  - December '03 requirements from BAH.
  - Updated to handbook 1.4.1 (3/22/06)
  - Additional Updates Incorporated:
    - New AIRS reprocessing flows (8/06)
    - GEOS requirements – Flows began in Nov '06
    - All LaRC "Backhaul" Requirements removed
    - Extension of TRMM, QuikScat missions
- Significant changes in testing are indicated in Blue, Problems in Red

Ratings Changes:

Upgrade: ↑:

GSFC → JPL: Almost Adequate → **Good**
(testing retuned)

Downgrade: ↓ :

GSFC → EROS: Adequate → **Low**
(Congestion on EBnet to Doors Gig-E)

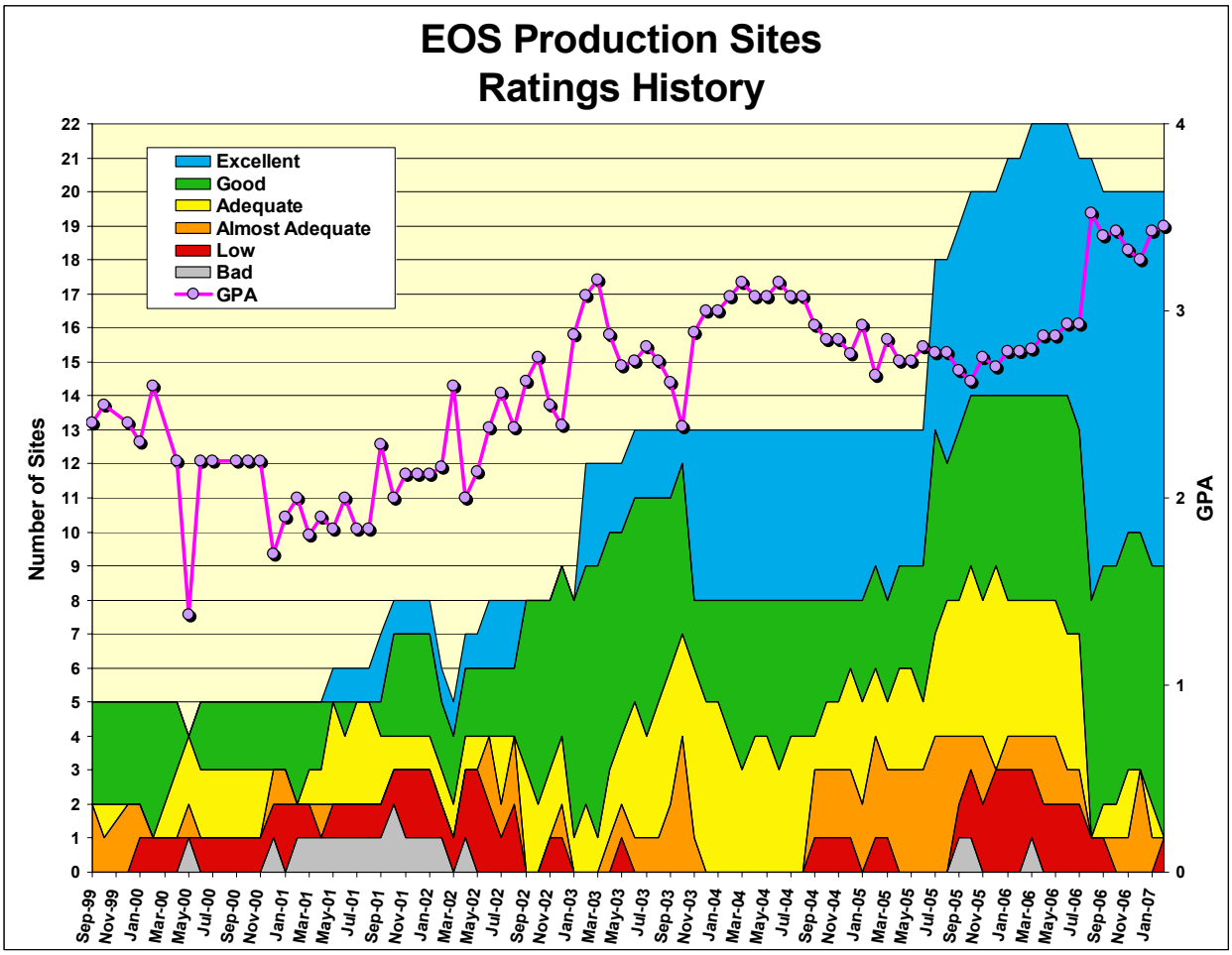
(See site discussion below for details)

Ratings Categories:

Rating	Value	Criteria
Excellent:	**4**	**Total Kbps** > Requirement * 3
Good:	**3**	1.3 * Requirement <= **Total Kbps** < Requirement * 3
Adequate:	**2**	Requirement < **Total Kbps** < Requirement * 1.3
Almost Adequate:	**1.5**	Requirement / 1.3 < **Total Kbps** < Requirement
Low:	**1**	Requirement / 3 < **Total Kbps** < Requirement / 1.3
Bad:	**0**	**Total Kbps** < Requirement / 3

Where Total Kbps = Integrated Kbps (where available), otherwise just iperf

Ratings History:



The chart above shows the number of sites in each classification since EOS Production Site testing started in September 1999. Note that these ratings do NOT relate to absolute performance -- they are relative to the EOS requirements.

Network Requirements vs. Measured Performance

February 2007		Requirements (mbps)		Testing					Ratings		
Source → Destination	Team (s)	Current	Future	Source → Dest Nodes	Avg User Flow mbps	iperf Avg mbps	Total Avg mbps	Integrated mbps	Rating re Current Requirements		Rating re
		Feb-07	Oct-07						Feb-07	Last Month	Oct-07
GSFC –> ASF	QuikScat, Radarsat	n/a	n/a	GSFC-CSAFS → ASF	n/a	n/a	n/a		n/a	n/a	n/a
ASF –> LASP	QuikScat	0.02	0.02	ASF → LASP [via IOnet]	n/a	1.09	1.09		Excellent	E	Excellent
EDOS –> LASP	ICESat, QuikScat	0.4	0.4	EDOS → LASP [via IOnet]	n/a	21.2	21.2		Excellent	E	Excellent
GSFC –> NOAA	QuikScat	0.0	0.0	n/a	n/a	n/a	n/a		n/a	n/a	n/a
GSFC –> EROS	MODIS, LandSat	285.4	285.4	GDAAC → EROS LPDAAC	28.4	206.4	234.8	212.1	LOW	A	LOW
GSFC –> JPL (PIP)	AIRS, ISTs	57.6	40.5	GDAAC → JPL-AIRS	5.5	77.7	83.2	78.6	GOOD	A A	GOOD
JPL –> GSFC	AMSR-E, MISR, etc.	7.4	7.4	JPL-PTH → GSFC-PTH	n/a	89.1	89.1		Excellent	E	Excellent
JPL –> RSS	AMSR-E	2.5	2.5	JPL-PODAAC → RSS	n/a	4.6	4.6		GOOD	G	GOOD
LaRC –> JPL	TES, MISR	46.1	39.6	LARC-DAAC → JPL-TES	7.7	81.3	88.9	81.7	GOOD	G	GOOD
JPL –> LaRC	TES	52.6	52.6	JPL-PTH → LARC-PTH	n/a	87.3	87.3		GOOD	G	GOOD
GSFC –> LaRC	CERES, MISR, MOPITT	71.7	67.2	GDAAC → LDAAC	15.7	280.9	296.6	280.9	Excellent	E	Excellent
LaRC –> GSFC	MODIS, TES	0.2	0.2	LDAAC → GDAAC	n/a	244.2	244.2		Excellent	E	Excellent
JPL –> NSIDC	AMSR-E	1.3	1.3	JPL-PTH → NSIDC SIDADS	n/a	88.7	88.7		Excellent	E	Excellent
NSIDC –> GSFC	MODIS, ICESAT, QuikScat	13.3	13.3	NSIDC DAAC → GDAAC	0.1	123.2	123.3	123.2	Excellent	E	Excellent
GSFC –> NSIDC	MODIS, ICESAT, QuikScat	64.1	64.1	GDAAC → NSIDC-DAAC	0.8	89.3	90.1	89.3	GOOD	G	GOOD
NSSTC –> NSIDC	AMSR-E	7.5	7.5	NSSTC → NSIDC DAAC	n/a	12.7	12.7		GOOD	G	GOOD
LaRC –> NCAR	HIRDLS	5.4	5.4	LDAAC → NCAR	n/a	83.8	83.8		Excellent	E	Excellent
US –> JAXA	QuikScat, TRMM, AMSR	2.0	2.0	GSFC-EDOS-Mail → JAXA DDS	0.2	5.1	5.3	5.1	GOOD	G	GOOD
JAXA –> US	AMSR-E	1.3	1.3	JAXA DDS → JPL-QSCAT	n/a	3.15	3.15		GOOD	G	GOOD
GSFC –> ERSDAC	ASTER	12.5	12.5	ENPL-PTH → ERSDAC	4.6	88.2	92.8	88.7	Excellent	E	Excellent
ERSDAC –> EROS	ASTER	26.8	26.8	ERSDAC → EROS PTH	n/a	85.8	85.8		Excellent	E	Excellent
GSFC –> KNMI	OMI	3.3	3.3	GSFC-OMISIPS → OMI-PDR	n/a	22.4	22.4		Excellent	E	Excellent

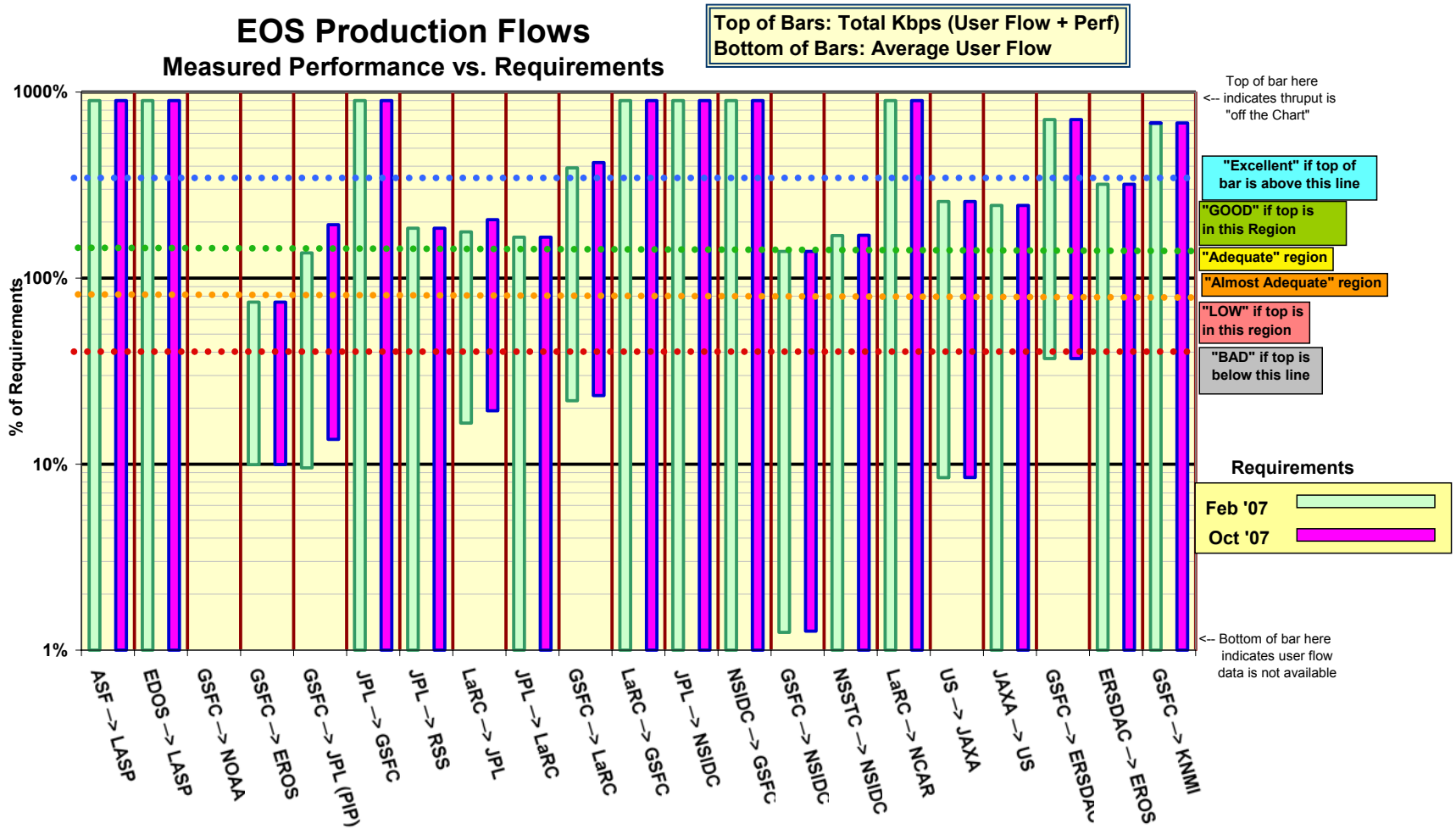
Notes: Flow Requirements include:
TRMM, Terra, Aqua, Aura, ICESAT, QuikScat, GEOS

***Criteria:**

Excellent	**Total Kbps** > Requirement * 3
GOOD	1.3 * Requirement <= **Total Kbps** < Requirement * 3
Adequate	Requirement < **Total Kbps** < Requirement * 1.3
Almost Adequate	Requirement / 1.3 < **Total Kbps** < Requirement
LOW	Requirement / 3 < **Total Kbps** < Requirement / 1.3
BAD	**Total Kbps** < Requirement / 3

Ratings Summary	Feb-07 Score	Req Prev	Oct-07 Score
Excellent	11	11	11
GOOD	8	7	8
Adequate	0	1	0
Almost Adequate	0	1	0
LOW	1	0	1
BAD	0	0	0
Total	20	20	20
GPA	3.45	3.43	3.45

This graph shows two bars for each source-destination pair. Each bar uses the same actual measured performance, but compares it to the requirements for two different times (February '07 and October '07). Thus if the requirements increase, the same measured performance will be lower in comparison.



Interpretation: The bottom of each bar is the average measured user flow to a site. Thus the bottom of each bar indicates the relationship between the requirements and actual flows. Note that the requirements include a 50% contingency factor above what was specified by the projects, so a value of 66% would indicate that the project is flowing as much data as requested. The top of each bar represents the integrated measurement – this value is used to determine the ratings.

1) EROS:

Ratings: GSFC → EROS: ↓ : Adequate → **Low**
ERSDAC→ EROS: Continued **Excellent**

Web Page: http://ensight.eos.nasa.gov/Organizations/production/EROS.shtml
http://ensight.eos.nasa.gov/Organizations/production/EROS_PTH.shtml

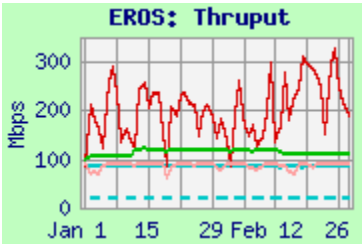
Test Results:

Source → Dest	Medians of daily tests (mbps)				
	Best	Median	Worst	User Flow	Integrated
GSFC-DAAC → EROS LPDAAC	323.3	206.4	85.7	28.4	212.2
GSFC-PTH → EROS PTH	349.1	203.3	61.4		
GSFC-ENPL → EROS PTH	356.4	355.5	281.6		
ERSDAC→ EROS	88.1	85.8	73.9		
NSIDC→ EROS	114.7	112.2	107.6		
LaRC→ EROS	92.4	92.4	77.5		
EROS LPDAAC → GSFC DAAC	138.5	122.5	95.4		
EROS PTH→ GSFC PTH	457.9	442.0	382.9		

Requirements:

Source → Dest	Date	mbps	Rating
GSFC→ EROS	→ Mar '08	285.4	Low
ERSDAC→ EROS	FY '06, '07	26.8	Excellent

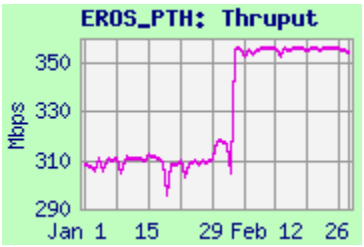
Comments:



GSFC → EROS: The rating was switched this month to use the DAAC to DAAC measurement, rather than from GSFC-ENPL, since the DAAC to DAAC measurement is more relevant to production.

Although the peak values from GDAAC and GSFC-PTH to EROS are close to the peak values from GSFC-ENPL, there is often significant congestion on the EBnet to Doors Gig-E circuit (in use from GDAAC and GSFC-PTH). This congestion reduces the daily median and worst values.

The user flow this month was up from only 18 mbps last month (but is still far below the recent averages). It had only a small contribution to the integrated measurement on which the rating is based, and which as usual is lower than the sum of the User Flow + median iperf. This congested Gig-E at GSFC causes the rating to drop to "Low"



The GSFC-ENPL host has a direct connection to the MAX, bypassing the congested EBnet to Doors Gig-E circuit, and does not experience similar congestion to the DAAC. Thus it more fully demonstrates the capability of the wide area network. The improvement at the beginning of February is believed to be due to an upgrade to Abilene. From ENPL, the performance would now be rated "Good".

ERSDAC → EROS: The median thruput from ERSDAC to EROS-PTH (in support of the ASTER flow) was stable on the APAN / Abilene route (limited by the ERSDAC 100 mbps tail circuit), and is more than 3 times the 26.8 mbps requirement, resulting in an "Excellent" rating.

NSIDC → EROS: The median thruput from NSIDC-SIDADS to EDC-PTH was stable this month.

LaRC → EROS: The thruput from LaRC-PTH to EDC-PTH was also stable this month – the diurnal variation problem was fixed in January.

EROS → GSFC: The thruput for tests from EROS to GSFC (both DAAC to DAAC and PTH to PTH) were mostly stable this month, but note that the DAAC to DAAC flow cannot use a significant portion of the WAN capability.

2) JPL:

2.1) JPL ←→ GSFC:

Ratings: GSFC → JPL: ↑ Almost Adequate → **Good**
JPL → GSFC: Continued **Excellent**

Web Pages:

http://ensight.eos.nasa.gov/Missions/aqua/JPL_AIRS.shtml
http://ensight.eos.nasa.gov/Organizations/production/JPL_QSCAT.shtml
http://ensight.eos.nasa.gov/Organizations/production/JPL_PODAAC.shtml

Test Results:

Source → Dest	NET	Medians of daily tests (mbps)				
		Best	Median	Worst	User Flow	Integrated
GSFC-DAAC → JPL-AIRS	PIP	90.5	77.7	31.0	5.5	78.6
GSFC-CNE → JPL-AIRS	SIP	88.5	83.2	50.0		
GSFC-PTH → JPL-QSCAT	PIP	90.4	75.8	33.8		
GSFC-PTH → JPL-PODAAC	PIP	92.2	87.8	46.5		
GSFC-CNE → JPL-MISR	SIP	72.5	45.8	21.1		
JPL-PTH→ GSFC PTH	PIP	89.2	89.1	63.5		
JPL-PODAAC→ GSFC DAAC	PIP	39.8	37.4	19.2		

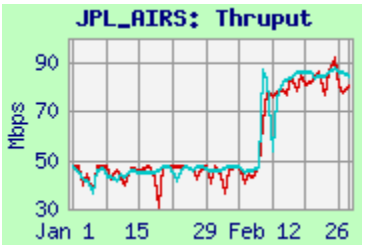
Requirements:

Source → Dest	Date	Mbps	Rating
GSFC → JPL Combined	FY '07	57.6	**Good**
JPL → GSFC combined	CY '06-09	7.4	**Excellent**

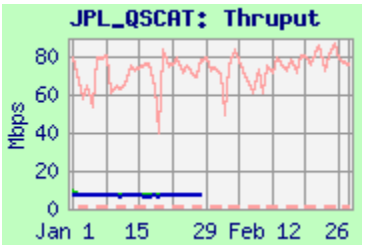
Comments:

GSFC → JPL:.

AIRS: Performance from GSFC (DAAC and CNE) to JPL-AIRS had dramatically improved with the NISN SIP WANR upgrade in April '06. But at that point thruput was limited to about 50 mbps by the test parameters, not the upgraded circuit. So the testing was retuned in early February, resulting in another significant improvement, and a rating upgrade to "Good".



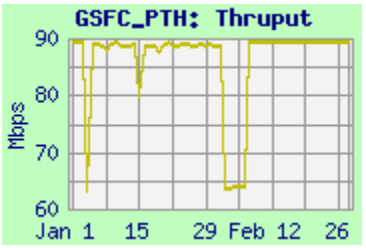
QSCAT: The CSAFS node has been replaced, and no longer supports testing, so the results above are only from GSFC-PTH. Thruput from GSFC-PTH improved slightly this month.



PODAAC: Thruput from GSFC-PTH also improved slightly this month.

MISR: Testing from GSFC-CNE was also retuned in early February, resulting in another significant improvement – median thruput was about 27 mbps last month.

JPL → GSFC: The previous JPL-PODAAC to GSFC-DAAC testing was replaced by JPL-PTH to GSFC-PTH testing to better reflect the network capabilities. The rating remains "Excellent".



2.2) JPL ←→ LaRC

Ratings: LaRC → JPL: Continued **Good**
JPL→ LaRC: Continued **Good**

Web Pages:
http://ensight.eos.nasa.gov/Organizations/production/JPL_TES.shtml
http://ensight.eos.nasa.gov/Missions/terra/JPL_MISR.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)				
	Best	**Median**	**Worst**	**User Flow**	**Integrated**
LaRC DAAC → JPL-TES	90.7	81.3	47.0	7.7	81.7
LaRC PTH → JPL-TES	91.0	86.3	63.6		
LaRC PTH → JPL-TES	91.0	86.3	63.6		
LaRC PTH → JPL-TES sftp	1.80	1.79	1.64		
LaRC PTH → JPL-PTH sftp	14.0	14.0	4.4		
LaRC DAAC → JPL-MISR	73.1	51.3	26.2		
JPL-PTH → LaRC PTH	87.4	87.3	62.3		

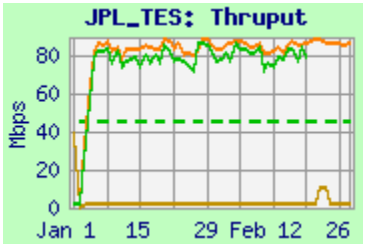
Requirements:

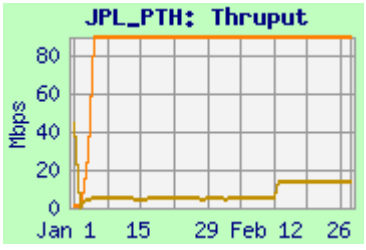
Source → Dest	Date	Mbps	Rating
LaRC DAAC → JPL-TES	FY '07	29.8	**Good**
LaRC DAAC → JPL-MISR	FY '07	18.5	**Good**
LaRC DAAC → JPL-Combined	FY '07	45.8	**Good**
JPL → LaRC	FY '07	52.6	**Good**

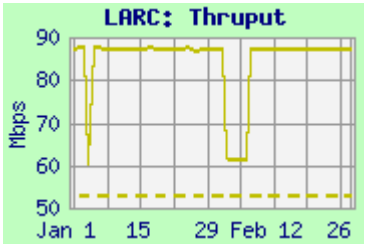
Comments: Note that LDAAC testing went down on Feb 20 for the node to be moved to campus address space. Testing resumed in March.

LaRC→ JPL: Performance remained stable, with the LaRC diurnal variation fixed in January. The combined requirement increased in November '06, with the addition of GEOS flows (was 39.6 mbps previously). The rating remains "Good". Sftp results are much lower than iperf, due to TCP window limitations. A patch to increase this window was installed in mid Feb, improving performance to JPL-PTH, but only temporarily to JPL-TES (under investigation).

JPL → LaRC: This requirement is for TES products produced at the TES SIPS at JPL, being returned to LaRC for archiving. The measured thruput was also stable this month. The rating remains "Good".







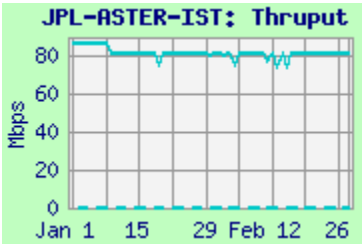
2.3) ERSDAC → JPL ASTER IST

Rating: Continued **Excellent**

Web Page:http://ensight.eos.nasa.gov/Organizations/production/JPL_PTH.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)		
	Best	**Median**	**Worst**
ERSDAC → JPL-ASTER-IST	82.0	81.5	46.3



Comments: This test was initiated in March '05, via APAN replacing the EBnet circuit. The typical 82 mbps must be well in excess of the requirements (IST requirements are generally 311 kbps).

3) Boulder CO:

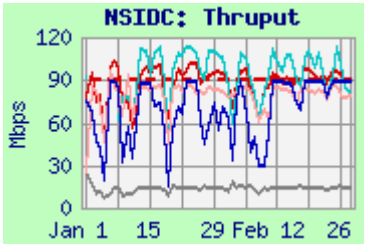
3.1) GSFC ← → NSIDC DAAC:

Ratings: NSIDC → GSFC: Continued **Excellent**
GSFC → NSIDC: Continued **Good**

Web Page: http://ensight.eos.nasa.gov/Organizations/production/NSIDC.shtml

Test Results:

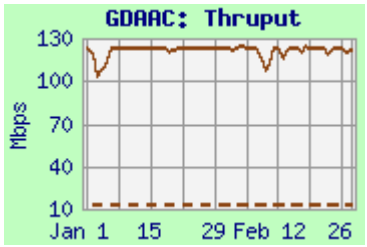
Source → Dest	Medians of daily tests (mbps)				
	Best	Median	Worst	User Flow	Integrated
GSFC-DAAC→ NSIDC-DAAC	106.4	89.3	43.0	0.8	89.3
GSFC-PTH → NSIDC-DAAC	95.8	81.7	36.1		
GSFC-ISIPS → NSIDC (iperf)	112.7	93.7	33.6		
GSFC-ISIPS → NSIDC (ftp)	21.7	14.1	7.3		
NSIDC DAAC → GSFC-DAAC	123.9	123.2	77.3		
NSIDC → GSFC-ISIPS (iperf)	84.6	83.3	58.4		



Requirements:

Source → Dest	Date	Mbps	Rating
GSFC → NSIDC	CY '07	64.1	Good
NSIDC → GSFC	CY '06 – '07	13.3	Excellent

Comments: GSFC → NSIDC: This rating is based on testing from GDAAC to the NSIDC DAAC. The iperf and integrated thruput values were stable this month. This requirement varies from month to month, based on planned ICESAT reprocessing. This month the reprocessing **IS NOT** included. The Integrated thruput is above this lower requirement by more than 30%, so the rating remains "Good". "Adequate". Note that in November and December '06 the reprocessing **was** included – the requirement was higher (78 mbps), so the same performance would have rated "Adequate".



NSIDC → GSFC: Performance from NSIDC to GSFC remained stable, after improving dramatically with the NISN WANR upgrade in August; the rating remains "Excellent".

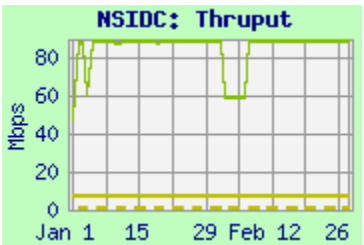
GSFC-ISIPS ← → NSIDC: Performance between ISIPS and NSIDC is at nominal levels for the circuit capacity. Iperf thruput was much higher than ftp due to window size limitations.

3.2) JPL → NSIDC:

Ratings: JPL → NSIDC: Continued **Excellent**

Test Results:

Source → Dest	Medians of daily tests (mbps)			
	Best	Median	Worst	Requirement
JPL PTH → NSIDC-SIDADS	88.8	88.7	37.0	1.34
JPL PODAAC → NSIDC-SIDADS	7.2	7.2	6.8	1.34



Comments: The test from JPL-PTH to NSIDC-SIDADS more fully assess the true network capability – the thruput is much higher than from PODAAC. Thruput from PODAAC was stable this month after the previous improvement from the NISN WANR upgrade. The rating remains "Excellent".

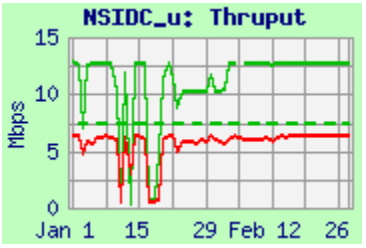
3.3) NSSTC → NSIDC:

Ratings: NSSTC → NSIDC: Continued **Good**

Web Pages: http://ensight.eos.nasa.gov/Missions/aqua/NSIDC_u.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)			
	Best	**Median**	**Worst**	**Req.**
NSSTC → NSIDC DAAC (iperf)	12.8	12.7	0.4	7.5
NSSTC → NSIDC DAAC (ftp)	6.4	6.3	5.3	



Comments: NSSTC (Huntsville, AL) sends AMSR-E L2/L3 data to NSIDC. Median thruput is stable and more than 30 % over the requirement, so is rated "Good"

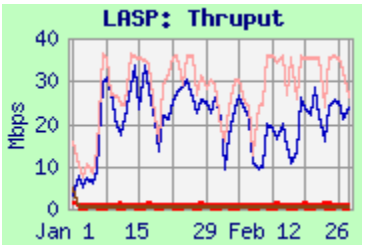
3.4) LASP:

Ratings: GSFC → LASP: Continued **Excellent**
ASF → LASP: Continued **Excellent**

Web Page: http://ensight.eos.nasa.gov/Organizations/production/LASP.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)			
	Best	**Median**	**Worst**	**Requirement**
ASF → LASP	1.32	1.09	0.62	0.024
GSFC EDOS → LASP	34.6	21.2	6.4	0.4
GSFC PTH → LASP (iperf)	36.2	31.4	10.0	
GSFC PTH → LASP (sftp)	0.50	0.50	0.49	



Comments: The requirements are now divided into ASF and GSFC sources:

ASF → LASP: Thruput from ASF to LASP is limited by ASF T1 circuit, rating "Excellent", due to the modest requirement

GSFC → LASP: GSFC → LASP iperf thruput is noisy but well above the requirement; the rating continues "Excellent. But sftp thruput is MUCH lower than iperf, due to window size limitations. A patch is available.

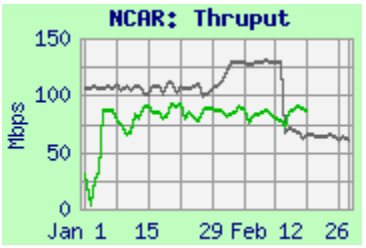
3.5) NCAR:

Ratings: LaRC → NCAR: Continued **Excellent**
GSFC → NCAR: Continued **Excellent**

Web Pages http://ensight.eos.nasa.gov/Missions/terra/NCAR.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)			
	Best	**Median**	**Worst**	**Requirement**
LaRC → NCAR	89.2	83.8	56.4	5.4
GSFC → NCAR	91.9	69.4	55.3	5.1



Comments: NCAR (Boulder, CO) is a SIPS for MOPITT (Terra, from LaRC), and has MOPITT and HIRDLS QA (Aura, from GSFC) requirements. The diurnal performance problem from LaRC was fixed in January; the steady thruput is well above 3 x the requirement, so the rating remains "Excellent".

From GSFC the median thruput is steady at well over 3 x the requirement, so that rating also remains "Excellent".

4) GSFC ←→ LaRC:

Ratings: GSFC → LaRC: Continued **Excellent**
LDAAC → GDAAC: Continued **Excellent**

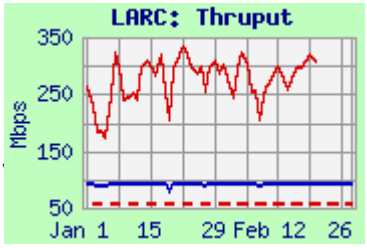
Web Pages: http://ensight.eos.nasa.gov/Organizations/production/LARC.shtml
http://ensight.eos.nasa.gov/Organizations/production/LATIS.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)				
	Best	Median	Worst	User Flow	Integrated
GDAAC → LDAAC	332.4	280.9	199.5	15.7	280.9
GSFC-NISN → LaTIS	280.5	272.2	215.4		
GSFC-PTH → LaRC-PTH	93.5	93.2	82.9		
GSFC-PTH → LaRC-ANGe	323.1	307.6	214.3		
LDAAC → GDAAC	244.1	170.2	50.9		
LDAAC → GSFC-ECHO	87.8	82.9	50.0		

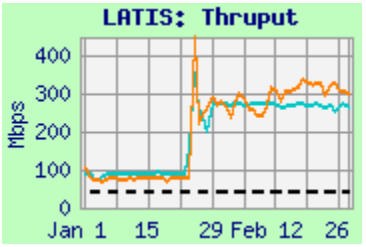
Requirements:

Source → Dest	Date	Mbps	Rating
GSFC → LARC (Combined)	Nov '06 – Feb '07	71.7	Good
LDAAC → GDAAC	FY '07	0.2	Excellent



Comments: Performance of all GSFC ←→ LaRC flows improved dramatically in August '06.

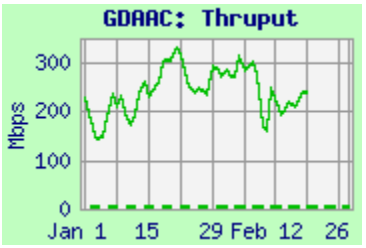
GSFC → LaRC: The combined requirement had been split between LDAAC and LaTIS when the flows were on separate circuits, but is now treated as a single requirement as they have been both on PIP since Feb '05. The rating is now based on the GDAAC to LaRC ECS DAAC thruput, compared to the combined requirement. This requirement increased in November '06 with the addition of GEOS flows (was 67 mbps previously).



LaTIS: The thruput to LaTIS improved dramatically in late January, as a result of LaRC LAN reconfiguration. The initial thruput was over 400 mbps, but testing was retuned lower (!) to avoid overtaxing the NISN LaRC router.

The **GSFC→ LaRC ECS DAAC** median thruput continues above 3 x the combined requirement, so the combined rating remains "Excellent". The significant diurnal variation was fixed in January. Also note: the lower thruput (around 90 mbps) to LaRC-PTH is limited by its 100 mbps LAN connection.

LaRC → GSFC: Performance from LDAAC → GDAAC was moderately stable this month, after the severe diurnal variation was fixed in January. The thruput remained much more than 3 x this requirement, so the rating continues as "Excellent"..



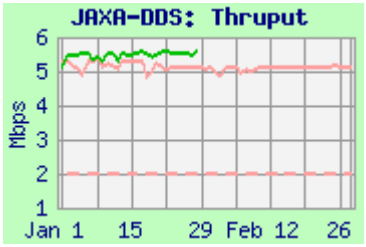
5) US ←→ JAXA:

Ratings: JAXA → US: Continued **Good**
US → JAXA: Continued **Good**

Web Pages http://ensight.eos.nasa.gov/Organizations/production/JAXA_EOC.shtml
http://ensight.eos.nasa.gov/Organizations/production/JAXA_HEOC.shtml
http://ensight.eos.nasa.gov/Organizations/production/JPL_QSCAT.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)				
	Best	Median	Worst	User Flow	Integrated
GSFC-EDOS-Mail → JAXA-DDS	5.27	5.11	4.51	0.17	5.13
GSFC–EDOS → JAXA-azusa	8.08	7.95	3.63		
GSFC-ENPL → JAXA-azusa	66.1	42.5	22.6		
GSFC-PTH → JAXA-azusa	51.0	32.9	16.1		
GSFC-PTH → JAXA (sftp)	0.83	0.82	0.78		
JAXA-DDS → JPL-QSCAT	3.18	3.15	2.44		
JAXA-DDS → GSFC-DAAC	1.99	1.96	1.81		
JAXA-azusa→ GSFC-MAX	8.93	8.87	8.31		

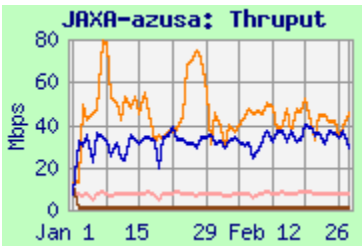


Requirements:

Source → Dest	Date	Mbps	Rating
GSFC → JAXA	Nov '03 – Mar '08	1.99	Good
JAXA → US	Nov '03 – Mar '08	1.28	Good

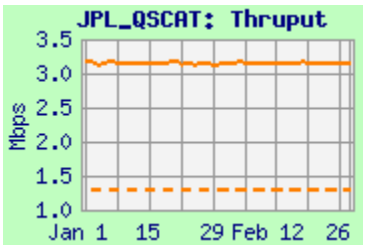
Comments: The US → JAXA requirement was updated in October '06, to reflect the extension of the TRMM and QScat missions (the requirement was 1.43 mbps previously). The JAXA flows were moved to APAN / Sinet in August '06. Prior to this switch the flows used a dedicated 2 mbps ATM circuit from JPL to JAXA, using NISN PIP between GSFC and JPL. Performance on that circuit was stable at about 1.5 mbps.

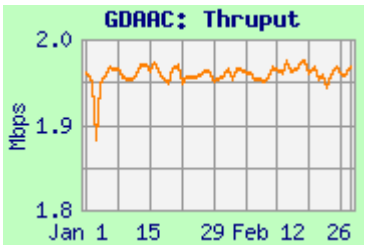
US → JAXA: DDS: Testing from GSFC-CSAFS was discontinued in late January when the CSAFS node was replaced, so the rating is now based on results from GSFC-EDOS-Mail (which is the actual source of data for JAXA). Performance from GSFC is now limited by TCP window size and 10 mbps Ethernets on JAXA's DDS node, and the GSFC-EDOS-Mail node. Thruput was stable this month; the thruput is below 3 x the requirement; the rating remains "Good".

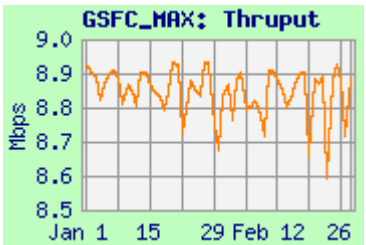


Azusa: Performance from GSFC-PTH and GSFC-ENPL to the JAXA azusa test node is not limited by a 10 mbps Ethernet, so its much higher performance more accurately shows the capability of the network. But thruput using sftp between these same nodes is much lower, limited by ssh window size. A patch is available, but is not installed

JAXA → US: Performance improved with the switch to APAN / Sinet in August '06, and is now also limited by TCP window size and 10 mbps Ethernets. But it has not yet been retuned to fully utilize the increased network capability. The thruput from JAXA to JPL was more than 30% over the requirement, but less than 3 x, so the rating remains "Good".







6) ERSDAC ←→ US:

Rating: Continued **Excellent**

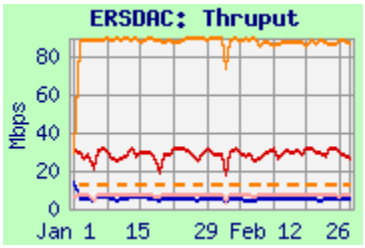
Web Page :http://ensight.eos.nasa.gov/Organizations/production/ERSDAC.shtml

US → ERSDAC Test Results:

Source → Dest	Medians of daily tests (mbps)				
	Best	Median	Worst	User Flow	Integrated
GDAAC → ERSDAC	34.7	29.4	14.6		
GSFC ENPL (FE) → ERSDAC	89.9	88.2	73.0	4.6	88.7
GSFC-EDOS → ERSDAC	5.8	5.8	2.7		

Requirements:

Source → Dest	FY	Mbps	Rating
GSFC → ERSDAC	'03 - '07	12.5	**Excellent**



Comments: Dataflow from GSFC to ERSDAC was switched to APAN in February '05, and the performance above is via that route.

The thruput from GDAAC is apparently limited by packet loss at the GigE to FastE switch at Tokyo-XP. The GigE GDAAC source does not see any bottlenecks until this switch (The Abilene and APAN backbones are 10 Gbps), and thus exceeds capacity of the switch's FastE output circuit. But the FastE connected GSFC-ENPL node is limited to 100 mbps by its own interface, so does not suffer performance degrading packet loss – its performance is much higher. Testing from EDOS to ERSDAC is currently limited by a 10 mbps Ethernet in its path – a waiver request is in process to use the FastE interface.

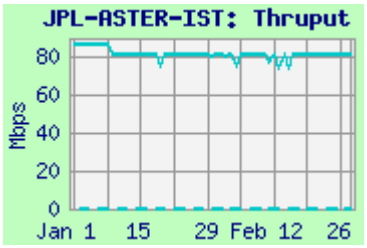
The requirement now includes the level 0 flows which used to be sent by tapes. The thruput increased in Nov '06 (and got steadier from GSFC-ENPL at the same time). It continues to be more than 3 x this requirement, so the rating remains "Excellent".

ERSDAC → US Test Results:

Source → Dest	Medians of daily tests (mbps)		
	Best	Median	Worst
ERSDAC → JPL-ASTER IST	82.0	81.5	46.3
ERSDAC → EROS	88.1	85.8	73.9

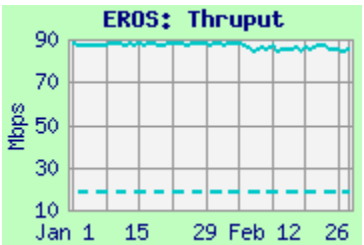
Requirements:

Source → Dest	Date	mbps	Rating
ERSDAC→ EROS	FY '06	26.8	**Excellent**



Comments:

ERSDAC → JPL-ASTER-IST: This test was initiated in March '05, via APAN replacing the EBnet circuit. The results are much higher than previously via the 1 mbps ATM circuit, and should be considered "Excellent" (no requirement is specified at this time – but other IST requirements are 311 kbps)



ERSDAC → EROS: The results from this test (in support of the ERSDAC to EROS ASTER flow, replacing tapes) were stable this month. Thruput improved to these present values in April '05 after the Abilene to NGIX-E connection was repaired. The median thruput is more than 3 x the requirement, so the rating remains "Excellent"

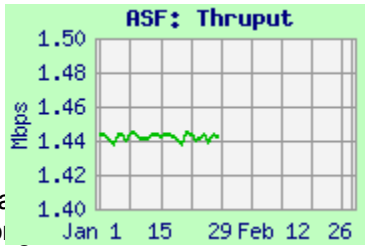
7) ASF

Rating: Continued **Excellent**

Web Page: http://ensight.eos.nasa.gov/Organizations/production/ASF.shtml

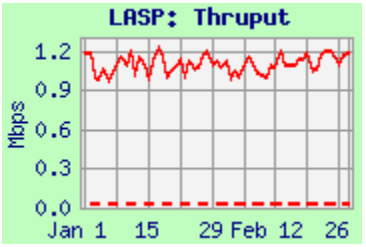
Test Results:

Source → Dest	Medians of daily tests (mbps)		
	Best	**Median**	**Worst**
GSFC-CSAFS → ASF	n/a	n/a	n/a
ASF → LASP	1.32	1.09	0.62



Comments: **GSFC to ASF**: Testing to ASF transitioned to IOnet in April '06 – a discontinued from ASF to NOAA and JPL-SEAPAC; also user flow data is no lo

Performance to ASF has been consistent with the T1 (1.5 mbps) circuit capacity. However, testing from CSAFS stopped with the CSAFS node switch at the end of January. Testing resumed in march from another GSFC node, with similar results.



ASF to LASP: Performance was stable; the rating remains "Excellent".

Requirements:

Source → Dest	Date	kbps	Rating
ASF→ LASP	FY '07	24	**Excellent**

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8) Other SIPS Sites:

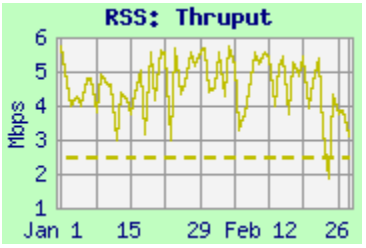
Web Pages http://ensight.eos.nasa.gov/Missions/aqua/RSS.shtml
http://ensight.eos.nasa.gov/Missions/aura/KNMI_OMIPDR.shtml

Test Results:

Source → Dest	Medians of daily tests (mbps)				
	Best	**Median**	**Worst**	**Requirement**	**Rating**
JPL → RSS	5.7	4.6	1.7	2.4	Continued **Good**
GSFC → KNMI-ODPS	22.5	22.4	20.6	3.3	Continued **Excellent**

Comments:

8.1 RSS: RSS (Santa Rosa, CA) is a SIPS for AMSR-E (Aqua), receiving data from JPL, and sending its processed results to GHCC (aka NSSTC) (Huntsville, AL). The NISN dedicated circuit from JPL to RSS was upgraded in August '05 from 2 T1s (3 mbps) to 4 T1s (6 mbps) to accommodate the larger RSS to GHCC flow. This month the thruput again was noisy but mostly stable.



The iperf thruput remains more than 30% above the requirement, so the rating remains "Good" (had dropped to "Low" in September '06 due to heavy user flow). User flow data remains unavailable on this circuit.

Note that with the present configuration (passive servers at both RSS and GHCC), the RSS to GHCC performance cannot be tested.

8.2 KNMI: KNMI (DeBilt, Netherlands) is a SIPS and QA site for OMI (Aura). The route from GSFC is via MAX to Abilene, peering in DC with Geant's 10Gbps circuit Frankfurt, then Surfnet via Amsterdam. The rating is now based on the results from OMISIPS at GSFC to the ODPS primary server, protected by a firewall. This was quite a bit lower than previously to the Backup server, which was outside the firewall. Thruput remains well above 3 x the requirement, rating "Excellent".